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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,736	08/25/2003	Hiroshi Nomura	P23691	1197
7055	7590	09/28/2004		
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			EXAMINER SMITH, ARTHUR A	
			ART UNIT 2851	PAPER NUMBER

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/646,736

Applicant(s)

NOMURA, HIROSHI

Examiner

Arthur A Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3 and 5-8 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 2 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/17/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 3 and 5-8 are rejected under 35 U.S.C. 102(a) as being anticipated by Nomura et al. (JP 2002-277719), supplied by applicant. (The rejection makes reference to a machine translation of the application that has been included by the examiner.)

In reference to claims 1 and 5-8, Nomura et al. discloses a cam mechanism comprising: a cam ring, ref. 15; and a linearly movable frame, ref. 19, movable by the cam ring along an optical axis of an optical system without rotating, by engagement of a plurality of cam grooves, C1, located on said cam ring with a plurality of complementing cam followers, ref. 19f, located on said linearly movable frame when said cam ring is rotated, said linearly movable frame supporting at least one optical element of said optical system, wherein said plurality of cam grooves are located at different positions at least in said optical axis direction and which trace substantially a same reference cam diagram, paragraph 24; wherein all cam grooves of said plurality of cam grooves are partial cam grooves each having at least one end opening at at least one of opposite ends of said cam ring, so as not to include an entire portion of said reference cam diagram; wherein said plurality of complementing cam followers are located at different positions at least in said optical axis direction and are respectively engageable in said plurality of cam grooves; and wherein at least one of said complementing cam followers

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remains engaged in a corresponding said cam groove while at least one of the other of said complementing cam followers comes out of said end opening and is disengaged therefrom, when said linearly movable frame moves to at least one of opposite limits for movement thereof in said optical axis direction, see fig. 8.

In reference to claim 2, Nomura et al. discloses wherein: the mechanism is part of a zoom lens system movable between a retracted position and a zoom range position; and during a zooming operation within the zoom range position, the at least one of said complementing cam followers remains engaged in corresponding said partial cam groove while the at least one of the other of said complementing cam followers comes out of said end opening and is disengaged therefrom, when said linearly movable ring moves to at least one of opposite limits for movement thereof in said optical axis direction, paragraphs 27 and 28.

Allowable Subject Matter

Claims 2 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to render inherent or obvious the claimed limitation of wherein said plurality of cam grooves comprises a front cam groove having at least one front end opening at a front end of said cam ring so as not to include a front part of said entire portion of said reference cam diagram, and a rear cam groove having at least one

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rear end opening at a rear end of said cam ring so as not to include a rear part of said entire portion of said reference cam diagram; wherein said complementing cam followers comprise a front cam follower and a rear cam follower which are engaged in said front cam groove and said rear cam groove, respectively; wherein said front cam follower comes out of said front opening to be disengaged from said front cam groove while said rear cam follower remains engaged in said rear cam groove when said linearly movable frame moves to a front limit for movement thereof in said optical axis direction; and wherein said rear cam follower comes out of said rear opening to be disengaged from said rear cam groove while said front cam follower remains engaged in said front cam groove when said linearly movable frame moves to a rear limit for movement thereof in said optical axis direction.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arthur A Smith whose telephone number is (571) 272 2129. The examiner can normally be reached on Monday - Thursday from 8:00 AM to 5:30 PM. The examiner can also be reached on alternate Fridays during the same hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (572) 272 2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arthur A. Smith
September 20, 2004